Docket No. PT-3464-US-PCT
BFCA No. 27214-15

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF	:	IMHOF, Martin
TITLE	:	JOINT SOCKET FOR A HIP ENDOPROSTHESIS
SERIAL NO.	:	10/596,752
FILING DATE	:	December 8, 2008
EXAMINER	:	HOFFMAN, M.
ART UNIT	:	3774
CONFIRMATION NO.	:	1141

APPEAL BRIEF

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

The following Appeal Brief is submitted pursuant to the Notice of Appeal filed January 21, 2011 and the Pre-Appeal Conference Decision mailed May 10, 2011 in the above-identified application. This Appeal Brief, filed electronically through the EFS system within one month of the mailing date of the Pre-Appeal Conference Decision, is therefore timely filed.

This is an appeal from the decision of the Examiner dated October 22, 2010, rejecting claims 5–10 and 12–34 (the "Office Action"). These claims have been twice rejected and the fees required under 37 C.F.R. § 1.17, are detailed and properly paid as stated in the accompanying Fee Transmittal Form. Accordingly, this Appeal is properly filed.

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I. REAL PARTY IN INTEREST

Smith and Nephew Orthopaedics AG is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

U.S. Patent Application No. 12/296,796 ("the '796 application") is a commonly owned patent application that the Examiner alleges to have common subject matter. The '796 application has been finally rejected and a Notice of Appeal has been filed. An Appeal Brief is being filed in the '796 application concurrently with this brief. As of the date of this filing, an appeal number has not been assigned to the '796 application.

III. STATUS OF CLAIMS

Claims 5–10 and 12–34 remain pending and are on appeal (*see* Section VIII, Claims Appendix). Claims 1–4 have been cancelled and claim 11 has been withdrawn from consideration. Claims 5–10, 12–29, 34, and 35 stand rejected under 35 U.S.C. § 112, ¶ 2. Claims 5–10, 12, 14–17, and 19–35 stand rejected under 35 U.S.C. § 102(b). Claims 13 and 18 stand rejected under 35 U.S.C. § 103(a). Claims 5–25 stand rejected on the ground of nonstatutory obviousness-type double patenting.

IV. STATUS OF AMENDMENTS

No amendments were filed subsequent to the Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In a particular embodiment, the disclosure relates to a joint socket for a hip endoprosthesis.

Subject Matter of Claims 5–10, 12–18, 26, and 28

Independent claim 5 is directed to a joint socket for a hip endoprosthesis. *See* **Figures 1** and **2** (reproduced below). The socket includes a socket shell **18** configured to be implanted in the pelvic bone **10** of a patient. *See* **Figure 1** and p. 4, lines 6–9. The socket shell **18** has an inner surface **28** that defines an accommodating space **24** extending about an axis of rotation **26**. *See* **Figure 2** and p. 4, lines 13–18.

FIG 1

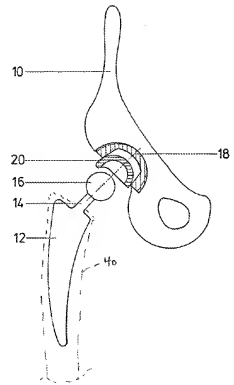
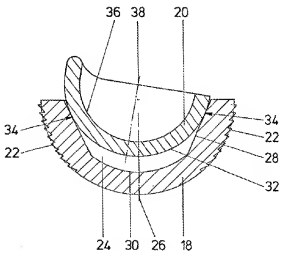


FIG 2



The socket further includes a socket insert **20** configured to provide a bearing for a joint head **16** of a prosthesis stem **12**. *See* **Figure 1** and p. 4, lines 2–5. A spherical outer surface **32** of the socket insert **20** is configured to be disposed in the accommodating space **24** of the socket shell **18** and contact the inner surface **28** of the socket shell **18** along a line of contact **34** that is concentric with the axis of rotation **26** of the accommodating space **24** of the socket shell **18**. *See* **Figure 2** and p. 4, lines 26–29. The line of contact **34** is surrounded by and intersects the spherical outer surface **32** of the socket insert **20**. *See id.* The socket insert **20** is coupleable in a self-locking manner within the accommodating space **24** along the line of contact **34**. *See* p. 5, lines 22–25.

The inner surface **28** of the socket shell **18** tapers toward a pole of the shell **18** in a region on either side of the line of contact **34** in such a manner that a radius of curvature of the taper of the inner surface **28** of the socket shell **18** in the region of the line of contact **34** is greater than the spherical radius of the outer surface **32** of the socket insert **20** at the line of contact **34** when the shell **18** and insert **20** are in contact with each other. *See* **Figure 2**; p. 4, lines 13–19; and p. 5, lines 3–6.

The inner surface **28** of the socket shell **18** may have a conical shape, defining an infinite radius of curvature (*i.e.*, a straight line) in the region of the line of contact. *See* **Figure 2** and p. 4, lines 17–19. The cone angle is a self-locking angle corresponding to a material pairing of the socket shell **18** and the socket insert **20**. *See* **Figure 2** and p. 4 and lines 20–26. The cone angle may be between about 4° and 10°. *See id.* In one particular embodiment, the cone angle is about 4.5°. *See id.* In another particular embodiment, the cone angle is about 9.5°. *See id.*

The joint socket shell **18** and the joint insert **20** may be configured to allow free rotation and tilting of the insert **20** in the socket shell **18** when the insert **20** and shell **18** are in contact with each other along the line of contact **34**. *See* **Figure 2** and p. 5, lines 12–14 and 21–22.

In one embodiment, at least a portion of an outer surface of the socket shell **18** comprises a threaded portion **22**. *See* **Figure 2** and p. 4, lines 9–12. Alternatively, the socket shell **18** may be configured to be fixed in bone by one or more screws. *See* **Figure 2** and p. 4, lines 8–9.

The accommodating space **24** may have a generally flat base **30**. *See* **Figure 2** and p. 4, lines 18–19.

Subject Matter of Claims 19–25, 27, and 29

Independent claim 19 is directed to a joint socket for a hip endoprosthesis. *See* **Figures 1** and **2**. The joint socket includes a socket shell **18** configured for implantation in a pelvic bone **10**. *See* **Figure 1** and p. 4, lines 6–9. The socket shell **18** has an inner surface **28** that defines an accommodating space **24** extending about an axis of rotation **26**. *See* **Figure 2** and p. 4, lines 13–18.

The joint socket also includes a socket insert **20** comprising a bearing surface **36** configured to receive a joint head **16** of a prosthesis stem **12**. *See* **Figures 1** and **2** and p. 5, lines 3–6. The socket insert **20** includes a spherical outer surface **32** configured for insertion in the accommodating space **24** of the socket shell **18**. *See* **Figure 2** and p. 4, lines 26–29. The outer surface **32** of the socket insert **20** is configured to contact the inner surface **28** of the socket shell **18** along a line of contact **34** that is concentric with the axis of rotation **26** of the accommodating space **24**. *See id.* The socket insert **20** is coupleable in a self-locking manner within the accommodating space **24**. *See* p. 5, lines 22–25.

The inner surface **28** of the socket shell **18** tapers toward a pole of the shell **18** in a region on either side of the line of contact **34** in such a manner that a radius of curvature in the region is greater than the spherical radius of the outer surface **32** of the socket insert **20**. *See* **Figure 2**, p. 4, lines 13–19, and p. 5, lines 3–6. Additionally, the line of contact **34** intersects the spherical outer surface **32** of the socket inert **20**. *See* **Figure 2** and p. 4, line 27 through p. **5**, line 2.

The inner surface **28** of the socket shell **18** has a conical shape and defines an infinite radius of curvature (*i.e.*, a straight line) in the region axially surrounding the line of contact **34**. *See* **Figure 2** and p. 4, lines 17–19. A cone angle of the conically shaped inner surface **28** is a self-locking angle corresponding to a material pairing of the socket shell **18** and the socket insert **20**. *See* **Figure 2** and p. 4, lines 20–26. The cone angle of the conical inner surface **28** may be between about 4° and 10°. *See id.* In one specific embodiment, the cone angle of the conical inner surface is about 4.5°. *See id.* In another specific embodiment, the cone angle of the conical inner surface is about 9.5°. *See id.*

Subject Matter of Claims 30–33

Independent claim 30 is directed to a joint socket for a hip endoprosthesis. *See* **Figures 1** and **2**. The joint socket includes a socket shell **18** having an inner surface **28** that defines an accommodating space **24** extending about an axis of rotation **26**. *See* **Figure 2** and p. 4, lines 13–18. At least a portion of the accommodating space **24** is in the form of a straight circular cone having a cone angle between about 4 degrees and 10 degrees. *See* **Figure 2** and p. 4, lines 20–26.

The joint socket further includes a socket insert **20** having an outer surface **32**. *See* **Figure 2** and p. 4, lines 27–30. The outer surface **32** is spherically shaped at least in a region in

which the outer surface **32** of the socket insert **20** comes into contact with the inner surface **28** of the straight circular cone when in use. *See id.*

Additionally, the socket shell **18** and socket insert **20** are coupleable in a self-locking manner along a contact **34** between the spherically shaped region and the circular cone portion. *See* p. 5, lines 22–25. The socket shell **18** and socket insert **20** only contact between the spherically shaped region and the circular cone portion. *See id.* Additionally, the socket insert may be monolithic. *See* **Figure 2**.

Subject Matter of Claims 34 and 35

Independent claim 34 is directed to a joint socket for a hip endoprosthesis. *See* **Figures 1** and **2**. The joint socket includes a socket shell **18** having an inner surface **28** including a tapered portion that extends about an axis of rotation **26** and comprises a taper. *See* **Figure 2** and p. 4, lines 14–26. The tapered portion at least partially defines an accommodating space **24** configured to receive a socket insert **20**. *See id.*

The joint socket further includes a socket insert **20** having an outer surface **32**. *See* **Figure 2** and p. 4, lines 26–29. The outer surface **32** has a spherically shaped region having a radius of curvature. *See id.* The socket insert **20** is configured to contact the socket shell **18** on the tapered portion along a line of contact **34** concentric with the axis of rotation **26** of the tapered portion when the socket insert **20** is inserted into the accommodating space **24** of the socket shell **18**. *See* **Figure 2** and p. 4, line 29 through p. 5, line 2.

A radius of curvature of the taper of the tapered portion surrounding the line of contact **34** is greater than the radius of curvature of the spherically shaped region of the socket insert **20**. *See* **Figure 2** and p. 4, lines 17–19. The tapered portion may be conical. *See id.*

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claims 5–10, 12–29, 34, and 35 are unpatentable under 35 U.S.C. § 112, ¶ 2.[1]

B. Whether claims 5–10, 12, 14–17, and 19–35 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0068980 to Serbousek et al. ("Serbousek").

C. Whether claim 13 is unpatentable under 35 U.S.C. § 103(a) in view Serbousek in combination with U.S. Patent No. 4,997,447 issued to Shelley ("Shelley").

D. Whether claim 18 is unpatentable under 35 U.S.C. § 103(a) in view Serbousek.

E. Whether claims 5–25 are unpatentable on the ground of nonstatutory obviousness-type double patenting in view of claims 9–28 of the '796 application.

[1] The Examiner also objected to claim 12. This objection is, however, based on grounds that are substantially similar to those used in the rejection of claim 12 under 35 U.S.C. § 112. Appellant believes that its arguments against the rejection of claim 12 obviates this objection.

VII. ARGUMENT

A. Claims 5–10, 12–29, 34, and 35 are Distinctly Claimed

The Examiner rejected claims 5–10, 12–29, 34, and 35 under 35 U.S.C. § 112, ¶ 2 as indefinite.

35 U.S.C. § 112, ¶ 2 recites: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." The Supreme Court has consistently stated that the primary purpose of claim language is to give fair warning to persons in the art of what will constitute infringement. *See, e.g., United Carbon Co. v. Binney Co.*, 317 U.S. 228 (1942) ("The statutory requirement of particularity and distinctness in claims is met only when they clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise."); *Evans v. Eaton*, 20 U.S. 356 (1822).

The Federal Circuit has clarified that "the claim, read in light of the specification, must apprise those skilled in the art of the scope of the claim." *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1340 (Fed. Cir. 2005). Accordingly, "[a] claim satisfies the definiteness requirement of § 112 '[i]f one skilled in the art would understand the bounds of the claim when read in light of the specification.'" *Praxair, Inc. v. Atmi, Inc.*, 543 F. 3d 1306, 1319 (Fed. Cir. 2008) *quoting Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001).; *see also* MPEP § 2173.02.

Here, the Examiner rejected claims 6 and 21 under 35 U.S.C. § 112, ¶ 2, asserting that it was unclear whether "an infinite radius of curvature" is the same as "a radius of curvature" recited in claims 5 and 19. But it is clear on the face of the claims that these terms reference the

same characteristic of the same region. Claim 5 recites "a radius of curvature of the taper of the inner surface of the socket shell in the region of said line of a contact." Claim 6 depends from claim 5 and further recites that "the inner surface has a conical shape and defines an infinite radius of curvature in the region of said line of contact." This claim language is consistent with the conical inner surface of the socket shell and the spherical socket insert shown in **Figure 2** and described at p. 4, line 13 through p. 5, lines 3–6. Therefore, in light of the description in the specification and the clear language of the claims, one skilled in the art would recognize that claim 6 clearly refers to the same "region of said line of contact" of the same "inner surface" of the same claimed socket shell of claim 5. Claim 6 then adds that the radius of curvature is a specific type—an infinite radius of curvature. Claims 19 and 21 use similar language to claims 5 and 6. Accordingly, both claims 6 and 21 meet the standard of § 112, ¶ 2. *See Praxair, Inc* 543 F. 3d at 1319.

The Examiner also specifically rejected claims 5, 19, and 34 under 35 U.S.C. § 112, ¶ 2, asserting that "a radius of curvature" was not disclosed in the specification. First, as a technical matter, the Examiner appears to apply a written description requirement that is not a component of § 112, ¶ 2. For at least this reason, the rejection is improper.

Moreover, claims 5, 19, and 34 meet the standards of 35 U.S.C. § 112, ¶¶ 1 and 2. The claimed "radius of curvature" encompasses an infinite radius of curvature (*i.e.*, a straight line). An infinite radius of curvature is shown at reference numeral **28** in **Figure 2**. Moreover, in the Summary of the Invention, the specification broadly discusses an inner surface of the socket shell. This description encompasses both straight and curved surfaces, each of which inherently have at least one radius of curvature. Therefore, those skilled in the art would understand what is

claimed when claims 5, 19, and 34 are read in light of the specification. For at least these reasons, claims 5, 19, and 34 meet the standard of § 112, ¶¶ 1 and 2. *See Praxair, Inc* 543 F. 3d at 1319.

The Examiner also specifically rejected claim 12 under 35 U.S.C. § 112, ¶ 2, stating that "it is unclear how the joint socket and the joint insert are configured to allow free rotation and tilting of the insert in the socket shell when the insert and shell are in contact with each other along the line of contact." Claim 5 recites "the socket insert [is] coupleable in a self-locking manner within said accommodating space [of the socket shell] along said line of contact." But nothing in this language requires the socket insert to self-lock *immediately* upon contact with socket shell. Therefore, claim 12's recitation that "the joint socket and the joint insert are configured to allow free rotation and tilting of the insert in the socket shell when the insert and shell are in contact with each other along said line of contact" is consistent with claim 5. When taken together, this language allows for (1) initial contact, with free rotation and tilting of the insert, followed by (2) a self-locking coupling along the line of contact after the orientation has been selected.

The steps of loosely inserting the socket insert, tilting and rotating it, and then pressing it into place is expressly claimed by claim 11 (withdrawn), and is fully supported by the specification. At page 5, lines 10–14 and 21–24, the specification explains that the socket insert comes into initial contact with the socket shell, and can then be "rotated at will" and "tilted at will" until it is in a desired position. After the initial contact and adjustment has been made, the socket insert is then "pressed axially into the accommodating space **24** so that it is clamped in a self-retaining manner in that orientation position."

Accordingly, those skilled in the art would understand what is claimed when claim 12 is read in light of the specification, and the language of claim 12 meets the standard of 35 U.S.C. § 112, ¶ 2. *See Praxair, Inc* 543 F. 3d at 1319.

For these reasons, Appellant submits that claims 5–10, 12–29, 34, and 35 meet the standards of 35 U.S.C. § 112, ¶ 2 and respectfully requests that this rejection be reversed and the claims be allowed.[2]

B. Serbousek Fails to Anticipate Claims 5–10, 12, 14–17 and 19–35

The Examiner rejected claims 5–10, 12, 14–17 and 19–35 under 35 U.S.C. § 102(b) as anticipated by Serbousek. Appellant appeals this rejection for the reasons set forth below.

35 U.S.C. § 102(b) states:

> A person shall be entitled to a patent unless … (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The Federal Circuit has held § 102(b) to require that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, (Fed. Cir. 1987).

1. Claims 5–10, 12, 14–17, 26, and 28

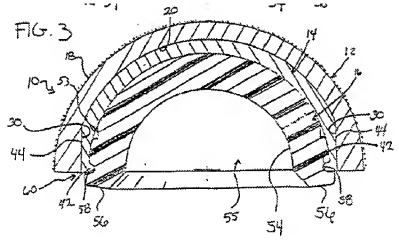
Independent claim 5 recites "the socket insert [is] coupleable in a self-locking manner within said accommodating space along said line of contact." From this plain language of the

[2] The Examiner also objected to claim 12, on similar grounds, asserting that this same language was also inconsistent with the self-locking recitation of claim 5. Because the socket insert may be freely rotated and tilted after its initial contact with the socket shell, but prior to self-locking, as explained above, the objection to claim 12 is believed to be moot.

claim, the "line of contact" does not include lines of incidental contact that might occur during the insertion or removal of the insert, but is a line of contact at which self-locking may occur.

Claim 5 further recites that "a radius of curvature of the taper of the inner surface of the socket shell in the region of said line of contact is *greater* than the spherical radius of the outer surface of said socket insert *at said line of contact* when the shell and insert are in contact with each other." (Emphasis added.) The reference to the line of contact refers to the line of contact where self-locking occurs—not a place of incidental contact.

When these elements are taken together, claim 5 requires that *at the line of contact*, a socket shell must (1) be self-locking with a socket insert, and (2) have a greater radius of curvature than that of the socket insert. The Examiner offered multiple interpretations of Serbousek, but none meet these requirements.



Serbousek teaches only that tapers 30, 44 of shell 12 and liner 14 may be self-locking. (¶ [0035].) But the spherical portions (shown in Figure 3, above) are not disclosed as self-locking. Therefore, even if contact occurs between the spherical portions of shell 12 and liner 14, this contact would not be a "line of contact" as recited by claim 5. Figures 3–4 show straight tapers,

which both have *the same* radius of curvature (*i.e.*, infinity). In paragraph [0034], Serbousek states that curved tapers may be used, but notes that "[i]f taper 44 of outside surface 32 of liner 14 is straight, taper 30 of side wall 26 of shell 12 is also straight." Serbousek fails to disclose any self-locking tapers, where the radius of curvature of the shell is greater than the radius of curvature of the insert at the line of contact.

Because Serbousek fails to disclose each and every element of claim 5 and its dependent claims 6–10, 12, 14–17, 26, and 28, Appellant respectfully requests that the anticipation rejection of these claims be reversed and the claims be allowed.

2. Claims 19–25, 27, and 29

Independent claim 19 recites:

> the inner surface of the socket shell tapers toward a pole of the shell in a region on either side of said line of contact in such a manner that a radius of curvature in the region is greater than the spherical radius of the outer surface of said socket insert.

Serbousek fails to disclose a shell having a radius of curvature greater than the spherical radius of the outer surface in a region on either side of a line of contact. As explained above with respect to claim 5, at the line of contact in Serbousek, both the shell and insert have the same radius of curvature.

For at least this reason, Serbousek fails to teach each and every element of claim 19 and its dependent claims 20–25, 27, and 29. Therefore, Appellant respectfully requests that the anticipation rejection of claims 19–25, 27, and 29 be reversed and that these claims be allowed.

3. Claims 30–33

Claim 30 recites a socket insert with an outer surface that "is spherically shaped at least in a region in which the outer surface of the socket insert comes into contact with the inner

surface of the straight circular cone [portion of a socket shell] when in use." Serbousek fails to disclose this element. In Serbousek, a straight taper contacts a straight taper, or a curved surface contacts a curved surface to form a "locking mechanical connection therebetween." (See ¶¶ [0034]–[0035].) Serbousek does not teach a spherical shaped region of an insert contacting a straight circular cone surface of a shell.

For at least this reason, Serbousek fails to teach each and every element of claim 30 and its dependent claims 31–33. Therefore, Appellant respectfully requests that the anticipation rejection of claims 30–33 be reversed and that these claims be allowed.

4. Claims 34 and 35

Independent claim 34 recites "a radius of curvature of the taper of the tapered portion [of the socket shell] surrounding the line of contact is greater than the radius of curvature of the spherically shaped region of the socket insert." Serbousek fails to disclose this element. As explained above with respect to claim 5, at the line of contact in Serbousek, both the shell and insert have the same radius of curvature.

For at least this reason, Serbousek fails to teach each and every element of claim 34 and its dependent claim 35. Therefore, Appellant respectfully requests that the anticipation rejection of claims 34 and 35 be reversed and that these claims be allowed.

C. The Combination of Serbousek and Shelley Fails to Render Claim 13 Obvious

The Examiner rejected claim 13 under 35 U.S.C. § 103(a) over Serbousek in view of Shelley. Claim 13 depends directly from claim 5. Serbousek fails to disclose each and every

element of claim 5 for the reasons discussed above. Shelley fails to provide these missing elements.

For at least this reason, the combination of Serbousek and Shelley fails to teach or suggest each and every element of claim 13. Therefore, Appellant respectfully requests that the obviousness rejection of claim 13 be reversed and that it be allowed.

D. Serbousek Fails to Render Claim 18 Obvious

The Examiner rejected claim 18 as unpatentable under 35 U.S.C. § 103(a) in view Serbousek. Claim 18 depends directly from claim 5. Serbousek fails to teach or suggest each and every element of claim 5 for the reasons discussed above. Therefore Serbousek fails to teach or suggest each and every element of claim 18, and Appellant respectfully requests that its obviousness rejection be reversed and that claim 18 be allowed.

E. The Double Patenting Rejection Should Be Reversed

The Examiner provisionally rejected claims 5–25 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 9–28 of the '796 application.

The doctrine of nonstatutory obviousness-type double patenting is used "to prevent extension of the patent right beyond statutory limits." *In re Goodman*, 11 F.3d 1046, 1052 (Fed. Cir. 1998).

Here, the subject application is the earlier filed application. The '796 application is still pending, and stands rejected under 35 U.S.C. § 103.[3] Accordingly, if the subject application were to issue, it would not extend the patent rights beyond statutory limits. Therefore, the

doctrine need not be applied and the application should be allowed to issue. This is the exact course advised by the MPEP:

> If a "provisional" nonstatutory obviousness-type double patenting (ODP) rejection is the only rejection remaining in the earlier filed of the two pending applications, while the later-filed application is rejectable on other grounds, the examiner should withdraw that rejection and permit the earlier-filed application to issue as a patent without a terminal disclaimer.

MPEP § 804.

The arguments presented in this Appeal overcome the rejections under 35 U.S.C. §§ 102, 103, and 112. Accordingly, the provisional nonstatutory obviousness-type double patent rejection is the only rejection remaining, and it should be reversed without the need to file a terminal disclaimer.

F. Conclusion

Appellant submits that the pending claims are allowable and urges allowance of the claims at an early date.

The Commissioner is hereby authorized to charge any additional fees, or credit any overpayment to Deposit Account No. 02-2051, referencing Attorney Docket No. 27214-15.

[3] A Notice of Appeal has been filed in the '796 application.

Respectfully submitted,

Dated: June 10, 2011

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VIII. CLAIMS APPENDIX

1–4 (Canceled).

5. A joint socket for a hip endoprosthesis, comprising:

a socket shell configured to be implanted in the pelvic bone of a patient, the socket shell having an inner surface that defines an accommodating space extending about an axis of rotation; and

a socket insert configured to provide a bearing for a joint head of a prosthesis stem, a spherical outer surface of said socket insert configured to be disposed in the accommodating space of the socket shell and contact the inner surface of the socket shell along a line of contact that is concentric with the axis of rotation of the accommodating space of the socket shell, the line of contact being surrounded by and intersecting the spherical outer surface of the socket insert, the socket insert coupleable in a self-locking manner within said accommodating space along said line of contact,

wherein the inner surface of the socket shell tapers toward a pole of the shell in a region on either side of said line of contact in such a manner that a radius of curvature of the taper of the inner surface of the socket shell in the region of said line of contact is greater than the spherical radius of the outer surface of said socket insert at said line of contact when the shell and insert are in contact with each other.

6. The joint socket of Claim 5, wherein the inner surface has a conical shape and defines an infinite radius of curvature in the region of said line of contact.

7. The joint socket of Claim 6, wherein a cone angle of said conically shaped inner surface is a self-locking angle corresponding to a material pairing of said socket shell and said socket insert.

8. The joint socket of Claim 7, wherein the cone angle of said conical inner surface is between about 4° and 10°.

9. The joint socket of Claim 7, wherein the cone angle of said conical inner surface is about 4.5°.

10. The joint socket of Claim 7, wherein the cone angle of said conical inner surface is about 9.5°.

11. A method for implanting a joint socket for a hip endoprosthesis, comprising:

inserting a socket shell in a pelvic bone, the socket shell having a conical inner surface that defines an accommodating space extending about an axis of rotation;

loosely inserting a socket insert into the accommodating space so that an outer surface of the socket insert comes into contact with the conical inner surface;

rotating the socket insert within the accommodating space to a desired position;

tilting the socket insert within the accommodating space to a desired position; and

pressing the socket insert into the accommodating space to engage the socket insert with the socket shell in a self-locking manner.

12. The joint socket of Claim 5, wherein the joint socket and the joint insert are configured to allow free rotation and tilting of the insert in the socket shell when the insert and shell are in contact with each other along said line of contact.

13. The joint socket of Claim 5, wherein at least a portion of an outer surface of the socket shell comprises a threaded portion.

14. The joint socket of Claim 5, wherein the socket shell is configured to be fixed in bone by one or more screws.

15. The joint socket of Claim 5, wherein the accommodating space comprises a generally flat base.

16. The joint socket of Claim 5, wherein the socket insert is a metallic socket insert.

17. The joint socket of Claim 5, wherein the socket insert is a ceramic socket insert.

18. The joint socket of Claim 5, wherein the line of contact is spaced between about 5mm and 15mm from an opening of the accommodating space.

19. A joint socket for a hip endoprosthesis, comprising:

a socket shell configured for implantation in a pelvic bone, the socket shell having an inner surface that defines an accommodating space extending about an axis of rotation; and

a socket insert comprising a bearing surface configured to receive a joint head of a prosthesis stem, the socket insert comprising a spherical outer surface configured for

insertion in the accommodating space of the socket shell and configured to contact the inner surface of the socket shell along a line of contact that is concentric with the axis of rotation of the accommodating space, the socket insert coupleable in a self-locking manner within said accommodating space,

wherein the inner surface of the socket shell tapers toward a pole of the shell in a region on either side of said line of contact in such a manner that a radius of curvature in the region is greater than the spherical radius of the outer surface of said socket insert.

20. The joint socket of Claim 19, wherein the line of contact intersects the spherical outer surface.

21. The joint socket of Claim 19, wherein the inner surface has a conical shape and defines an infinite radius of curvature in the region axially surrounding said line of contact.

22. The joint socket of Claim 21, wherein a cone angle of said conically shaped inner surface is a self-locking angle corresponding to a material pairing of said socket shell and said socket insert.

23. The joint socket of Claim 22, wherein the cone angle of said conical inner surface is between about 4° and 10°.

24. The joint socket of Claim 23, wherein the cone angle of said conical inner surface is about 4.5°.

25. The joint socket of Claim 23, wherein the cone angle of said conical inner surface is about 9.5°.

26. The joint socket of Claim 5, wherein said socket insert contacts said socket shell solely along said concentric line of contact.

27. The joint socket of Claim 19, wherein said socket insert contacts said socket shell solely along said concentric line of contact.

28. The joint socket of Claim 5, wherein the socket insert is monolithic.

29. The joint socket of Claim 19, wherein the socket insert is monolithic.

30. A joint socket for a hip endoprosthesis, comprising:

a socket shell having an inner surface that defines an accommodating space extending about an axis of rotation, at least a portion of the accommodating space is in the form of a straight circular cone, the straight circular cone having a cone angle between about 4 degrees and 10 degrees; and

a socket insert having an outer surface, the outer surface is spherically shaped at least in a region in which the outer surface of the socket insert comes into contact with the inner surface of the straight circular cone when in use.

31. The joint socket of Claim 30, wherein the socket shell and socket insert are coupleable in a self-locking manner along a contact between the spherically shaped region and the circular cone portion.

32. The joint socket of Claim 30, wherein the socket shell and socket insert only contact between the spherically shaped region and the circular cone portion.

33. The joint socket of Claim 30, wherein the socket insert is monolithic.

34. A joint socket for a hip endoprosthesis, comprising:

a socket shell having an inner surface comprising a tapered portion that extends about an axis of rotation and comprises a taper, the tapered portion at least partially defining an accommodating space configured to receive a socket insert;

a socket insert having an outer surface, the outer surface comprising a spherically shaped region having a radius of curvature, the socket insert being configured to contact the socket shell on the tapered portion along a line of contact concentric with the axis of rotation of the tapered portion when the socket insert is inserted into the accommodating space of the socket shell;

wherein a radius of curvature of the taper of the tapered portion surrounding the line of contact is greater than the radius of curvature of the spherically shaped region of the socket insert.

35. The joint socket of Claim 34, wherein the tapered portion is conical.

IX. EVIDENCE APPENDIX

Appellant has not submitted evidence pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132.

Examiner has not submitted any evidence relied upon by appellant in the appeal.

X. RELATED PROCEEDINGS APPENDIX

There are no decisions in any related appeals or interferences.